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ABSTRACT

As part of a longitudinal investigation of the effect of prenatal alcohol exposure on children's cognitive and socioemotional development, this study examined the role of physical punishment on the development of children's externalizing behavior. Participating in this phase were 296 inner-city African-American families with 7-year-olds who had been assessed in infancy. Each child's caregiver (mother, father, grandmother) was interviewed regarding child rearing practices, including intellectual stimulation and strategies used in conflict with the child. Caregivers and teachers rated behavior problems displayed by the child. Children were tested in the laboratory for intellectual development. Multiple regression findings indicated that caregiver reasoning was positively correlated with quality of intellectual stimulation measured on the HOME Inventory and with maternal verbal competence. Spanking was unrelated to maternal verbal competence and negatively correlated with the HOME Inventory. Caregiver reasoning, quality of intellectual stimulation, and maternal verbal competence were positively related to children's verbal comprehension. Spanking was associated with higher scores on a checklist of attention deficit hyperactivity disorder-like symptoms as related by caregivers and teachers. Spanking was also associated with caregiver-reported anxiety, social problems, thought problems, sex problems, delinquency, and aggression. Reasoning was not related to any behavior problems reported by caregivers or by teachers. The data suggest that caregiver reasoning to resolve conflict promotes verbal skills in children independent of mother's intelligence and the amount of intellectual stimulation in the home, but does not influence child behavior. Spanking seems to promote problems in the relationship with the mother but does not interfere with verbal intelligence. (KB)

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How Do Maternal Reasoning and Physical Punishment Contribute to Development of Verbal Competence and Behavior Problems ?

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Abstract

How mothers deal with conflict between themselves and their children was assessed with the Conflict Tactics Scale - Child Form (Strauss, 1979) in a sample of 296 inner-city African-American families. Four summary scores were computed: (a) reasoning (e.g. discussing an issue calmly), (b) verbal aggression (e.g. threatening, stomping away), (c) spanking (slapping, spanking, or hitting with something), and (d) physical aggression (not including spanking). Reasoning was positively correlated with quality of intellectual stimulation measured on the HOME Inventory (Bradley, et al. 1988) ($r = .20, p = .001$) and maternal verbal competence (Dunn and Dunn, 1981) (PPVT, $r = .13, p < .05$). Spanking, on the other hand, was unrelated to maternal PPVT and was negatively correlated with the HOME score ($r = -.12, p < .05$). Neither verbal aggression nor other physical aggression was related to either of these measures.

Reasoning, quality of intellectual stimulation, and maternal verbal competence were all positively related to the Verbal Comprehension factor of the Wechsler Intelligence Scale for Children (Wechsler, 1991) ($r = .19, .25, .44$, respectively). Furthermore, when these three variables were entered simultaneously in a multiple regression analysis, all three significantly predicted Verbal Comprehension, suggesting that the use of reasoning specifically promotes the development of the child's verbal skills, over and above the influence of general intellectual stimulation as measured on the HOME.

Behavior problems were assessed independently by the mother and classroom teacher on the ADHD Scale (Barkley, 1990) and the Child Behavior Checklist (Achenbach, 1991). Spanking was also associated with higher ADHD scores as reported by both mother ($r = .25, p < .001$) and teacher ($r = .15, p < .05$). Spanking was associated with higher scores in the domains of anxiety ($r = .13$) social problems ($r = .20$), thought problems ($r = .13$), sex problems ($r = .18$), and especially delinquency ($r = .35$) and aggression ($r = .33$) as reported by the mother; however, none of these relationships were corroborated by the teachers' reports of child behavior problems, which were not related to any of the maternal conflict scores. Several interpretations of these findings are possible: 1) spanking may lead to an increase in the behavior problems that the child manifests specifically in the mother-child relationship; 2) a child who is more aggressive at home may elicit more spanking from the parent; or 3) parents who spank more may be more likely to perceive or at least report child behavior problems. By contrast, reasoning was not related to any of the problems reported by the mother or the teacher, thus there was no evidence that the use of reasoning by the mother protected against the emergence of behavior problems in any of the eight domains assessed.

These data suggest that reasoning by the mother to resolve conflict promotes verbal skills in children independent of the mother's intelligence and amount of intellectual stimulation in the child's environment; however, the use of reasoning does not seem to affect the child's behavior. Spanking does not provide the mother with more control over her child's behavior; it may indeed promote hyperactivity and problems particularly in the relationship with the mother. On the other hand, spanking does not seem to interfere with the development of verbal intelligence.

It is of interest that one form of maternal behavior, reasoning, impacts specifically on intellectual development, whereas another, spanking, is specifically related to behavioral development.

There has been substantial debate over the effect of physical punishment on the development of externalizing behavior in children. Many studies have found higher externalizing behavior in children whose parents use physical discipline (Dodge et al., 1990; Weiss et al., 1992; Rothbaum and Weisz, 1994; Brenner and Fox, 1998). Others have found a nonlinear relationship between physical punishment and behavior, so that there is little effect spanking, for example, but greater effects for more severe forms of physical punishment (Deater-Deckard and Dodge, 1997). Furthermore, a weaker association has been found between externalizing behavior and spanking for African Americans, suggesting that, perhaps because spanking is more normative in the African American culture, it may have less effect on child development (Deater-Deckard and Dodge, 1997).

As part of a longitudinal investigation of the effects of prenatal alcohol exposure on children's cognitive and socioemotional development, this study examines the effects of parental conflict tactics on child development.

Recruitment and Assessment

1. All African American women were screened for alcohol consumption during their first visit to a prenatal clinic in a large urban maternity hospital.
2. All women averaging at least 7 drinks/week at the time of conception as well as a 5% random sample of the lower level drinkers and abstainers were invited to participate in the study. A group of high cocaine (> 2 days/week), low alcohol (< 7 drinks/week) users were also recruited.
3. Infant exclusionary criteria were birth weight < 1500 g, gestational age < 32 weeks, major chromosomal anomalies or neural tube defects, and multiple births. The sample consisted of 480 infants at birth.
4. The infants and their mothers or primary caregivers were seen in the laboratory when the infants were 6.5, 12, and 13 months of age, to assess cognitive and socioemotional development. The caregivers were interviewed regarding environmental factors impacting on the child's development and were given the Peabody Picture Vocabulary Test to measure their verbal ability.
5. When the children were 7 years of age, they returned to the laboratory with their current primary caregiver. The caregivers were interviewed regarding their own psychological symptoms and childrearing practices, including intellectual stimulation and strategies used in conflicts with the child. The caregivers also rated behavior problems displayed by the child and questionnaires were mailed to the child's classroom teacher regarding the child's behavior. The children were tested in the laboratory for cognitive development. Of the original cohort, 70.2% (337 children) were retained at 7 years.

Characteristics of Primary Caregivers (n = 296)

Socioeconomic status	Mean or %	SD	Range
I		1.0	
II		14.2	
III		18.2	
IV		32.1	
V		34.5	
Currently married		18.6%	
Education (years) ^a		12.3	2.0 - 18.0
Peabody Vocabulary score ^b			
Age (years)		73.2	40.0 - 127.0
Relationship to child:		36.3	22.0 - 74.0
Mother		85.5%	
Father		2.7%	
Grandmother		7.1%	
Other relative	3.7%		
Adoptive mother	1.0%		

a. Data on education was unavailable for one subject.

b. The vocabulary score was unavailable for a different subject.

The cohort consists of economically-disadvantaged African American inner city Detroit children. Two-thirds of the caregivers were in the two lowest Hollingshead socioeconomic classes. About one-fifth were married at the time of the interview and approximately 2/3 of the caregivers had graduated from high school.

Instruments

Home Observation for Measurement of the Environment (HOME, Bradley et al., 1988)

Semi-structured interview which measures quality of intellectual stimulation provided by the caregiver.

Peabody Picture Vocabulary Test- Revised (Dunn and Dunn, 1981)

Vocabulary recognition test closely related to Full Scale IQ ($r = .81$), administered to the caregiver.

Child Behavior Checklist (Achenbach, 1991)

Checklist of child behavior problems administered to the caregiver (Maternal Report) and mailed to the child's classroom teacher (Teacher Report Form).

Externalizing problems: aggression, delinquency

Internalizing problems: withdrawn, anxious, somatic problems

Other problems: sex problems (not on Teacher Report Form), thought problems, social problems, attention problems

ADHD Symptomatology (DuPaul et al., 1997)

Checklist of Attention Deficit/Hyperactivity Disorder-like symptoms administered to primary caregiver and mailed to classroom teacher

Inattention subscale - e.g. easily distracted, difficulty sustaining attention

Impulsivity subscale - e.g. blurts out answers, difficulty awaiting turn in group

Weschler Intelligence Scale for Children (Wechsler, 1991)-intelligence test administered to child, consists of Full Scale IQ, Performance IQ, and Verbal IQ subscales

SCL-90-R (Derogatis, 1992) - Checklist of psychological symptoms (such as depression, anxiety, and hostility) experienced by the caregiver within the past 7 days

Conflict Tactics Scales - Child Form (Straus, 1979)- Questionnaire administered to the caregiver, asking how many times during the past year she used the following strategies in response to conflict with the child:

Reasoning

Discussed issue calmly
Got information to back up your side of things
Brought in, or tried to bring in, someone to help settle things

Verbal aggression

Insulted or swore at child
Sulked or refused to talk about an issue
Stomped out of the house, room, or yard
Did or said something to spite child
Threatened to throw something at child
Threw or smashed or hit or kicked something

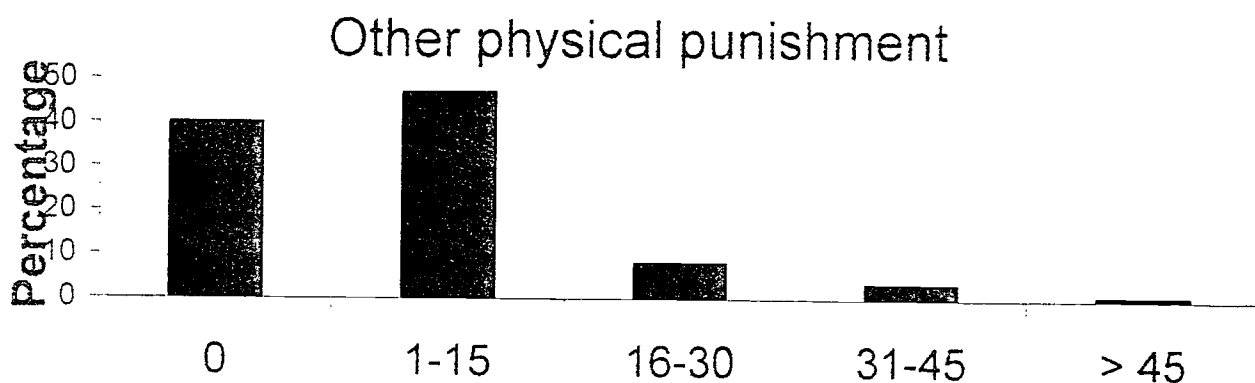
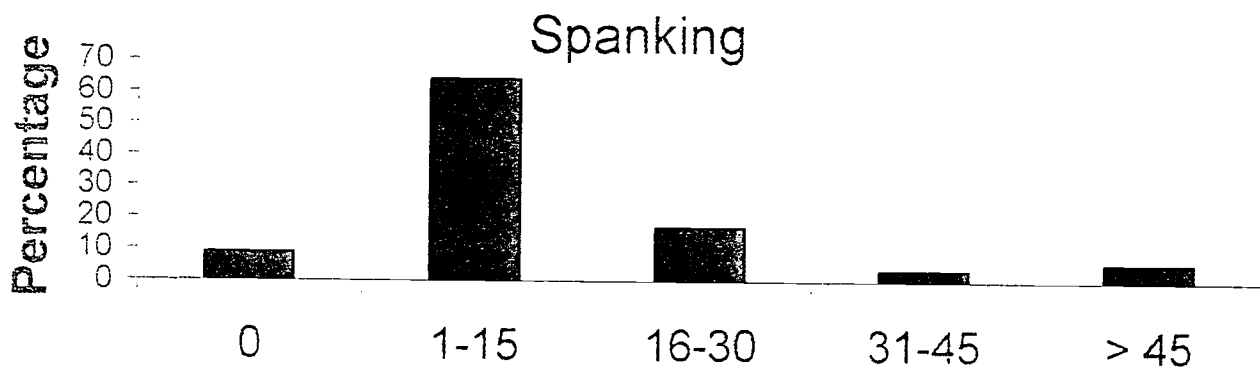
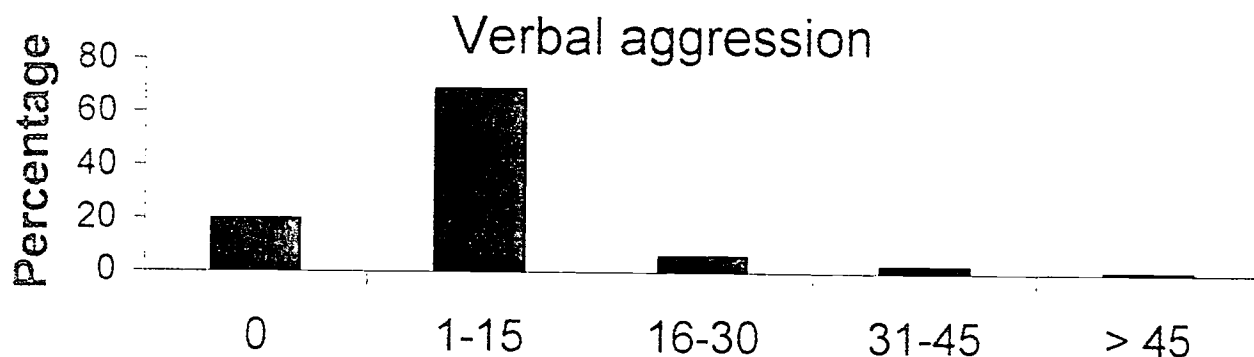
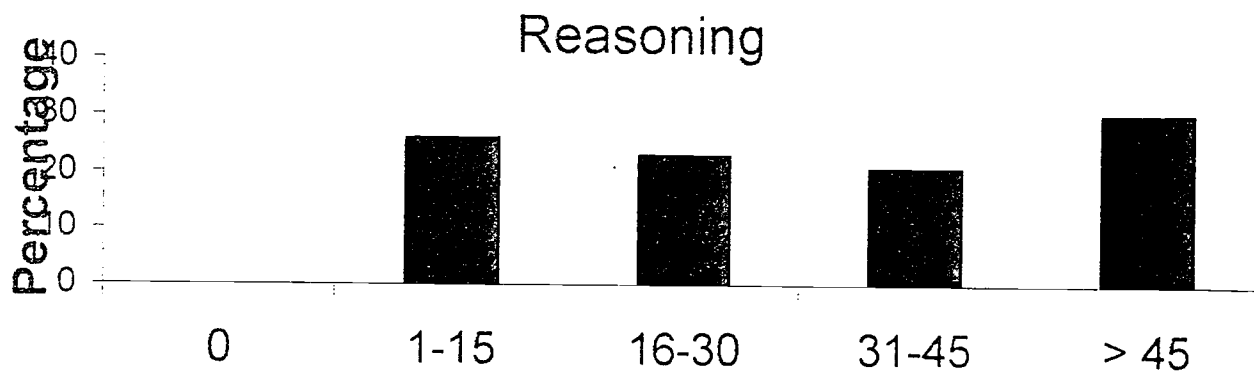
Spanking

Slapped or spanked the child
Hit or tried to hit the child with something

Other physical tactics

Threw something at child
Pushed, grabbed or shoved child
Kicked, bit, or hit child with a fist
Beat child up
Burned or scalded child
Threatened child with a knife or gun
Used a knife or fired a gun

Frequencies of Conflict Strategies Used by Caregivers



Number of times in year

Caregivers reported using reasoning more than any other strategy of conflict resolution. The caregivers used spanking more than verbal aggression or other physical punishment. Less than 10% reported no spanking in the last year and more than 10% reported spanking at least twice per month.

Correlations of Caregiver's Conflict Tactics with Characteristics of the Caregiver's Childrearing Environment

	Conflict tactics			
	Reasoning	Verbal aggression	Spanking	Other physical punishment
HOME score	.20**	-.05	-.12*	-.11†
Caregiver's vocabulary	.13*	-.03	.01	.01
Caregiver's psychological symptoms	.13*	.20**	.33***	.25***
*** p < .001				n=296
** p < .01				
* p < .05				
† p < .10				

1. The caregiver's use of reasoning to resolve conflicts with the child was positively correlated with quality of intellectual stimulation, (HOME score) and the caregiver's own verbal ability.
2. Spanking and use of other physical punishment were negatively correlated with intellectual stimulation.
3. Caregivers with higher verbal competence were more likely to use reasoning in conflicts with the child, but they were not less likely to use aversive tactics, such as verbal aggression or physical punishment.
4. Caregivers with more psychological symptoms were more likely to use aversive strategies in response to conflict with the child.

	Conflict tactics			
	Reasoning	Verbal aggression	Spanking	Other physical punishment
Intellectual ability				
Verbal IQ	.18**	.09	.01	.08
Performance IQ	-.01	.01	.02	.04
Full IQ	.09	.05	.01	.06

** p < .01

1. Reasoning by the caregiver in response to conflict with the child was positively correlated with the child's Verbal, but not Performance, IQ.
2. No relations were found between aversive conflict tactics of the caregiver and the child's intellectual functioning.

Verbal IQ		
	r	β at final step
Caregiver's vocabulary	.40***	.35***
HOME	.23***	.11*
Caregiver's reasoning in conflict situation	.18**	.11*

*** p < .001

** p < .01

* p < .05

$R^2 = .21$

Although partially explained by its association with the verbal ability of the caregiver and quality of intellectual stimulation, the caregiver's use of reasoning in conflict with child still contributed independently to the child's Verbal IQ.

ADHD-like symptoms	Conflict tactics			
	Reasoning	Verbal aggression	Spanking	Other physical punishment
Caregiver report (n=296)	.06	.21***	.25***	.17**
Teacher report (n=226)	.01	-.03	.15*	-.03

*** p < .001

** p < .01

* p < .05

1. Caregivers who used more aversive tactics in response to conflict with the child reported higher levels of ADHD-like symptoms in the child.
2. For spanking, this relation was confirmed by the teacher.

Correlation of Child Behavior Reported by Teacher and Caregiver with Caregiver's Conflict Tactics with the Child

Child Behavior Problems	Conflict tactics			
	Reasoning	Verbal aggression	Spanking	Other physical tactics
Caregiver Report (n = 296)				
Externalizing behaviors	.08	.28**	.33***	.22***
Internalizing behaviors	.06	.15*	.12*	.13*
Total problems	.12*	.29***	.29***	.20**
Teacher Report (n=220)				
Externalizing behaviors	-.01	-.01	.10	.01
Internalizing behaviors	.04	-.09	.01	-.10
Total problems	.01	.06	.11	.04

*** p < .001

** p < .01

* p < .05

Child behavior problems as reported by the caregiver were highly related to the caregiver's use of physical and verbal aggression with the child; however, these relations were not confirmed by teacher reports of the child's problem behaviors.

Conclusions

1. Caregivers of economically-disadvantaged inner city African American children most often used reasoning to resolve conflicts with their children. Spanking was very common and was used more than verbal aggression or other physical punishment.
2. The caregiver's use of reasoning in conflict with the child promoted greater verbal competence of the child, even after controlling for the effects of the caregiver's verbal ability and the quality of intellectual stimulation provided to the child.
3. Spanking by the caregiver was associated with more ADHD-like symptoms in the children, reported by both the caregiver and the child's teacher.
4. Aversive conflict tactics used by the caregiver, including verbal aggression, spanking, and other physical punishment were related only to the caregiver's report of child behavior problems.
5. The lack of an association between more severe physical punishment and behavior problems in the child may have been due to reluctance by the caregivers to admit severe punishment and risk criticism or intervention by the examiners.
6. Promoting reasoning in place of physical punishment may help to improve a child's verbal competence as well as reducing attention deficit/hyperactivity symptoms.

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